

THE ILLUSTRATED LONDON NEWS

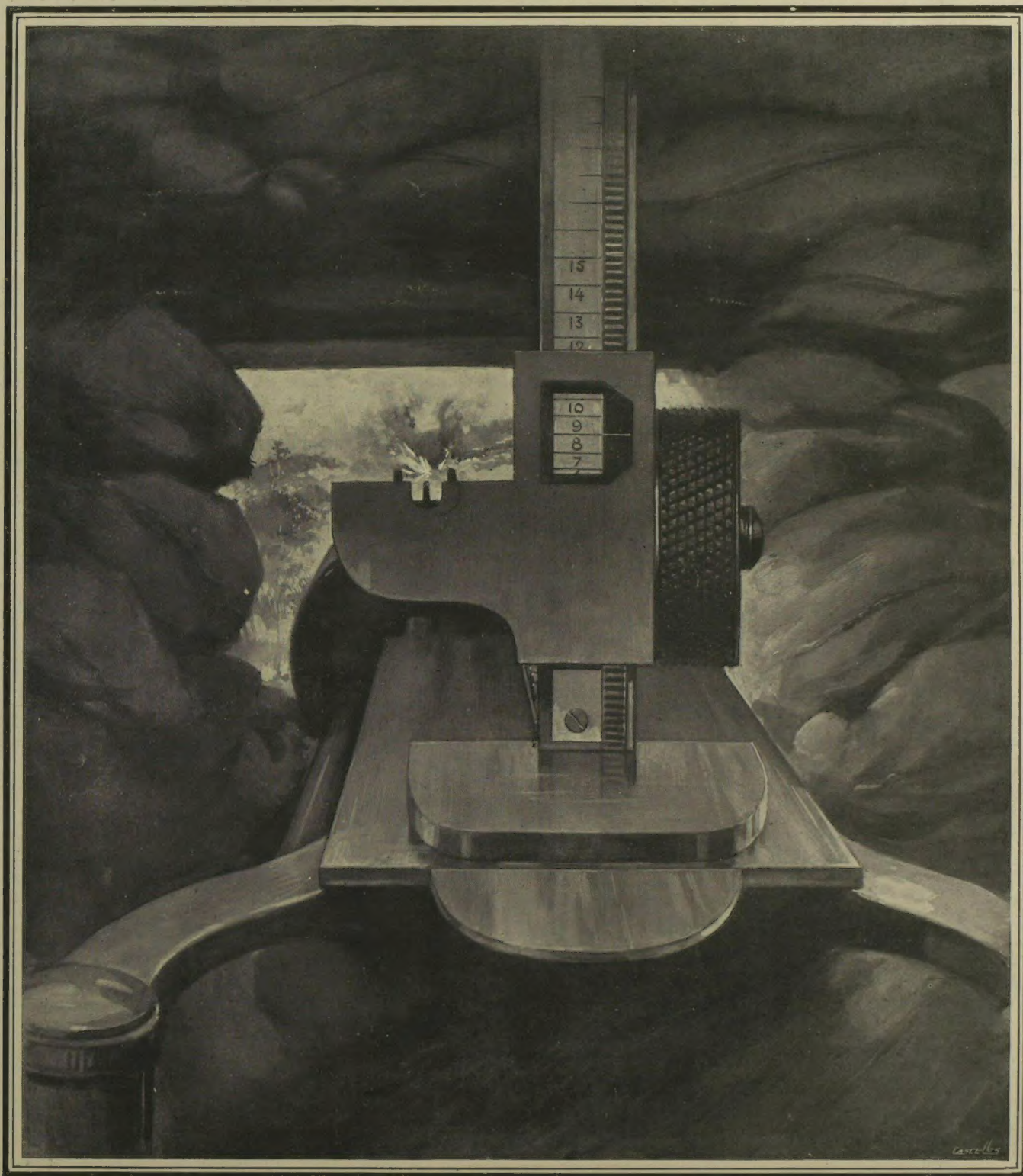
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SIXPENCE.

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"SEEING THE SIGHTS": WHAT A MACHINE-GUNNER SEES WHEN TAKING AIM AT AN ENEMY TRENCH-PARAPET.

The rear-sight of a machine-gun, with its elevating-screw, graduated scale, and notched aiming-bar, is shown as the man firing the gun sees it—the mechanism being drawn larger than life-size, as an aid to clearness. The gunner is taking aim at an enemy's trench from within a covered embrasure, and is ready to fire through the loophole. His sights are laid on the point at which a howitzer high-explosive shell (fired from in rear

of the machine-gun position) is seen bursting, the gunner intending to pour a shower of bullets in among the trench-defenders as they become suddenly exposed to view through the gap in the trench-parapet made by the shell-burst. A machine-gunner often gets on such occasions an exceptional opportunity for dealing effective execution. The officer who sent us the sketch from which our drawing was made gave it the title, "Seeing the Sight."

DRAWN BY H. W. KOFKOFK FROM A SKETCH BY A BRITISH OFFICER AT THE FRONT. COPYRIGHTED IN THE UNITED STATES AND CANADA.

SHELL-FUSES.

(See Illustrations on Pages 128-129.)

THE bursting charge in a shell or hand-grenade is fired by means of a fuse which may be one of three kinds: (1) a time-fuse, which causes the shell to explode after a given interval has elapsed since the fuse was lighted; (2) a percussion-fuse, which acts instantly when the shell strikes an object; or (3) a combination or double-purpose fuse, which may be employed in either of the above ways at the discretion of the artilleryman. In the last case both the devices are put into operation, the shell explodes at the pre-determined instant unless it strikes an obstacle in the meantime; in which case it bursts on impact.

We produce a photograph showing the inside of a percussion-fuse made by the Schneider Company. We will not attempt to describe its various parts in detail, as the photograph is not sufficiently clear to separate these. We think it interesting, however, to enter into some details of its complications and the work they entail.

A fuse consists of from fifteen to sixty pieces, some of which measure only two or three millimetres in diameter. They are mostly made in brass, bronze, or aluminium; and in some models small washers or rings of blotting-paper are employed, together with minute wads of mousseline-de-soie.

These parts are produced by a variety of special machines operated for the most part by women. The body of the fuse is usually stamped from a white-hot metal ingot at one blow, or cut out by machine-tools from a solid block of cold metal, and then finished with the same care as the shell itself. The safety springs are made from bronze wire, the resistance and elasticity of which are carefully registered. All finished parts are very closely examined and tested as to their accuracy before being assembled, as variations are certain to occur no matter how excellent the producing machinery may be, and a very minute variation in one or other of its details might destroy the efficiency of the finished article. It is, therefore, necessary to employ a staff of experienced inspectors—or viewers, as they are called—and to provide them with most delicate instruments for checking the dimensions of the various parts.

One small coppering alone has five different dimensions which require checking, and ten operations are therefore involved in handling this small part, it being necessary to apply a maximum and a minimum gauge to each in order to make sure that the accuracy of the part is within the limits of these gauges, any article which is smaller than the minimum gauge or larger than the maximum being rejected. The difference between the size of the maximum and minimum gauge is, in the case of the most accurate parts, as little as one-fortieth of a millimetre, and the admissible error on the rougher articles is only one-tenth of a millimetre. The machining of all the parts of a fuse involves, in some types, upwards of 400 operations. Women are very largely employed in assembling or putting together the component parts, and an extraordinary amount of patience is required in some of the operations, as the parts handled are so very small.

The time-fuse used for shrapnel requires as much precision as the percussion-fuse—perhaps, in some respects, more. As the latter works automatically at the moment of falling, the art of making it consists chiefly in adjusting the degree of sensitiveness of the apparatus to the coefficient of security which is desirable. The time-fuse must act at the precise moment for which it has been set, and if it fail to do this the effect of the shell is more or less weakened or destroyed. Further than this, a premature burst of a high-explosive shell may very easily do serious damage to friendly troops. The working of the time-fuse is very similar to that of the percussion article. The inertia of the *deparure* is employed to fire instantly the percussion-cap in the time-fuse, and so light the "slow match" which explodes the shell after an interval of time depending on the length of the "slow match" interposed between the percussion-cap and the bursting charge. The greatest difficulty in this case is experienced in producing a "slow match" or fuse-train which burns at a mathematically regular speed, and without this accurate fuse setting is impossible. The "slow match" in common use is produced by filling with fine black powder a lead tube about fifty centimetres long and two centimetres in external diameter, closing up both ends, and afterwards passing the tube through a series of draw-plates until its outside diameter is reduced to about four millimetres, the powder being compressed by this means to form a hard homogeneous core. The official French fuse has its "slow match" coiled round the nose of the fuse-body, the interior of the latter containing priming powder and a percussion-cap separated from a floating striker by the usual coil-spring. The after end of the "slow match" communicates with the bursting charge. In order to "set" this fuse, a hole is pierced by the artilleryman into the fuse-body through the "slow match," by which means the powder-core of the latter is put in touch with the priming powder in the fuse-body, the whole being pierced in such a position that the length of "slow match" between it and the bursting charge gives the correct interval for the range desired. When the shell starts on its flight, the inertia of the floating striker causes the percussion-cap to come in contact with it, and so ignites the priming powder. The normal fuse graduated in tenths of a second has to-day a maximum interval of twenty-four seconds, corresponding to a range of about 7400 yards at a normal angle of fire. The one objection to this type of fuse lies in the fact that, once pierced, it cannot be used for any longer range, neither can it with safety be put back into the magazine if not required. In another type of time-fuse the "slow match" is replaced by loose powder filling annular grooves in two trays situated one above the other and forming part of the nose. The grooves do not form complete rings, a partition being provided to interrupt the communication at one point. The powder in the lower ring communicates with the bursting charge of the shell, one end of the interrupted upper ring being in contact with a percussion-cap in the nose. The lower tray can be revolved so as to vary the position of the communicating hole between it and the upper tray, and so to increase

DR. E. J. DILLON.

We regret that we are unable to give this week an article by Dr. Dillon, as usual. We shall print one in our next issue.

or diminish the length of the powder-train between the cap and the bursting charge.

The Schneider fuse, a section of which we reproduce, is of the "tray" type as regards its time mechanism, but it is designed for the double purpose of time and percussion. Shrapnel shells are always provided with a double-purpose fuse, so that they may burst on impact if the time-fuse fail to act before the target is reached. A "porte retard" fuse is fitted to some shrapnel shells, the impact lighting a short time-fuse which bursts the shell during its ricochet after impact.

The fuses, when finished, are packed in tin boxes well lined with felt.

AT THE BOOKSELLERS'.

MISCELLANEOUS.

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- The Life and Death of Jason. William Morris. Decorated by Maxwell Armfield. 7s. 6d. net (Headley.)
- Leyl: A Romance of the Aegean Sea. Forbes Leslie. 6s. net (King.)
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- Scotland Yard: Its Men and Methods. George Dillnot. 1s. net (Marshall.)
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- The Secret Memoirs of Bertha Krupp. Henry W. Fischer. 2s. net (Cassell.)
- The Fiery Cross. An Anthology compiled by Mabel C. Edwards and Mary Booth. 2s. 6d. net (Grant Richards.)
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- Instinct and Intelligence. N. C. Macnamara. 6s. net (Frowde.)
- A Book of Belgium's Gratitude. 5s. net (The Bodley Head.)
- G. K. Chesterton: A Critical Study. Julius West. 7s. 6d. net (Martin Secker.)
- The Tropics. C. R. Enoch. 16s. net (Grant Richards.)
- FICTION.**
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- The Salt of the Earth. Fred M. White. 6s. (Ward, Lock.)
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LITERATURE.

Why Italy Went to War.

There is not in the service of the world's Press a writer who can deal with foreign affairs as authoritatively as Dr. E. J. Dillon. Linguist, stylist, traveller, diplomat *au bout des ongles*, trusted friend of rulers and of statesmen, he has placed journalism under a debt that cannot be lightly paid. Even to-day, in the face of a censorship that renders most newspaper comment incoherent, Dr. Dillon contrives to guide, stimulate, and inform his readers. It follows that his latest book, "From the Triple to the Quadruple Alliance: Why Italy Went to War" (*Daily Telegraph* and Hodder and Stoughton), will not only be closely read by thousands, but that it will give to the great majority of readers their first definite acquaintance with the history of Italy's troubled association with Germany and Austria. Reading the book, one cannot overlook the irony of a situation that limits Dr. Dillon's labours to the Press, while we have but few men in our own Foreign Office who can claim an equal knowledge of politics over as wide an area. Even some of the highest officials, with their experience in many parts of the world, are not more in touch with foreign Chancelleries, and many of the dangers that threatened our diplomacy could, but for the censorship, have been made known to the public by Dr. Dillon months before they came to full development. Other men speculate; he divines. His constant association with the world's real directors, and his shrewd judgment of men's capacities and idiosyncrasies, enable him to anticipate events. His story of Italy is a résumé of accomplished facts—the lucid, intimate result of first-hand information. He shows us a country for whose interests Bismarck said "I do not care a damn" forced into alliance with her natural enemy, Austria, because she feared France and was hypnotised by German Kultur. We read how Austria despised and Germany exploited her; how the Banca Commerciale—Italian only in name—was made the effective instrument for bringing about Italy's commercial subjugation to Kultur's apostles; and how the unspeakable Giolitti became, consciously or unconsciously, the weapon upon which Prince von Billow relied in the last days when he was negotiating in Rome to keep open the road that reaches Berlin via Vienna. Through all the maze of tangled interests, obscurities, personal ambitions, predilections, and fears, Dr. Dillon is a sure guide, and his story in these days possesses qualities denied to the most striking work of contemporary fiction. It is a part of the romance of the years through which we are passing presented to us in vivid language before our interest has found time to grow cold. His estimates of men are most happily phrased; he can sum up the salient characteristics of a notability in a phrase, as when he says that Pope Benedict XV. "had shown himself to be neutral in public morality," or speaks of "the ethical twist" in Signor Giolitti's mentality that "was reasonably taken by the (Italian) nation to disqualify him for the post of its principal trustee." Among the interesting facts stressed by Dr. Dillon we may note the profound effect of the first seemingly successful Dardanelles bombardment upon Austro-Italian negotiations, and the effect of the *Lusitania* outrage upon Italian opinion. It was the popular feeling and nothing less that barred Giolitti from office when Prince von Billow had summoned him in the last resource to overthrow the Salandra Government and secure Italy's neutrality. "It was the act of a moment, and had the effect of imparting direction to policy." The position of Italy is still obscure, and in this regard a pregnant sentence in Dr. Dillon's closing chapter may be quoted: "The relations between Italy and the Anglo-French Entente are far from being what they seem, and the scope for a complete and permanent betterment is great enough to attract and satisfy the highest diplomatic ambition . . . it behoves our nation, while hoping for the best, to prepare diligently for the alternative." In short, while we recognise the generous instincts of the Italian people, we must not overlook the "sacred egotism" of Governments, or disregard their possible conception of the highest duty to the State. If Austria had not been both obstinate and short-sighted, Italy would have remained neutral. Prince von Billow's mission to Rome did not fail altogether—but the things that may be said in a book may not always be repeated in a newspaper. Let those who are interested consult Dr. Dillon direct—they will be amply rewarded. No summary can do justice to the fascination of his pages.

Count Gobineau.

In 1853 and 1855, Arthur, Count Gobineau, French diplomatist and writer, published in two volumes his "Essay on the Inequality of the Human Races." His work won fame, but was considered likely to hurt his official prospects. It did bar him from certain posts, but he found life not altogether barren, and at Athens and Teheran he continued with success to be what his translator calls "a gentleman (as opposed to a man) of letters." He steeped himself in all knowledge, and later in life (the "Essay" was almost a juvenile effort, and surprising at that) he produced a memorable work on the Renaissance, a series of brilliant dialogues of the dead, which will keep Gobineau's name alive when his quasi-scientific work is forgotten. Two years ago Mr. Heinemann issued a translation of the "Renaissance," with an extraordinary rhodomontade of a preface by Dr. Oscar Levy, who smote Christianity high and thigh, cried down inferior races (on Gobineau's showing); cried up, also, aristocracy with Dizzy, and the Teuton with the egregious Houston Chamberlain. Once more Dr. Levy acts as introducer to Count Gobineau in a translation of "The Inequality of the Human Races" (Heinemann), but much has happened since 1913, and the prefatory gladiator sings very much smaller. We now believe, as we did not do before, in the inequality, but the belauded Teuton has fallen out of his place in the original picture, and we are not surprised that Dr. Oscar Levy gets through his preface with all speed, and contents himself with platitudes about the catastrophe which is now upon us. The book, however, is of curious interest to-day, and although immature and somewhat confusing was worthy of presentation in an English dress.



By G. K. CHESTERTON.

WAR, or the possibility of war, is the price we pay for the liberty of the mind. It can be rendered improbable by conversion—that is, by a common creed touching what things are sacred. It cannot be rendered impossible anyhow, except by denying our right to hold anything sacred. For it is intensely important to grasp that combatants do not commonly disagree about things, but about the value of things. It is idle to say you are only fining a man a farthing, if he chooses to say it is his lucky farthing. It is waste of breath to call a thing a rag when he calls it a flag. This is the fallacy of those who, like Mr. Gerald Stanley Lee, the able American critic, imagine that a war must be a misunderstanding, which social intercourse and explanation would have set right. Such explanations can only settle matters of material fact. It would undoubtedly be a good thing if we could always get these facts right; and it is one of the damning points in the Prussian and Austrian record that those countries refused any delay and debate concerning them. It would have been a good thing if the English people had known in time that the tale about James II. and the warming-pan was false. It would have been a good thing if the American people had known in time that the tale about the *Maine* outrage was false. But unless we know what value was attached by James II. to his religion, or by the Protestants to theirs, we could not correctly have predicted any avoidance of the quarrel which has turned to wormwood the waters of the Boyne. And the Spanish-American War similarly depended on the importance attached by Spain to her American colonies and the United States to their American hegemony. Where both sides admit the same facts, there can still be a quarrel about the values. Mr. Stanley Lee, in an entertaining article in *Everybody's Magazine*, says that the armed forces of Europe are only trying to express themselves in a clumsy way; and suggests that they might as well do it by using all their efforts to move a mountain, and then move it back again. Accepting the figure, I would suggest that a mountain is very often a sacred object, like the chief mountain of Japan, or like Ararat and Sinai. I would also suggest that it often contains diamonds or valuable minerals. Suppose such a hill to be dedicated to monks and inaccessible to miners, and you have a working model of the origin of most wars. Suppose some ruler quite convinced that the consecrated isolation merely keeps legitimate wealth from the world, and he will probably fight—he almost invariably does. If he does, you cannot prevent the mountaineers defending their mountain, except by proving to them that their diamonds are more precious than their deities, which is generally an impossibility, and seldom, in my humble opinion, an improvement. The only other way is for the ruler to be converted to the mountain religion, for which he may feel a distaste. It is simply sterile to say that a mountain is only a lump of stone. So is a diamond. It is ultimately only a matter of opinion whether a stone is a precious stone; and men have as much right to think a pebble is a talisman as to think it is a jewel.

Mr. Stanley Lee's article is about some American millionaires and their views of peace, and does not here otherwise concern me. I have no opinion of the idealism of such persons. It does not interest me that men who first become gold-bags afterwards become gas-bags. But I should think Mr. Lee was right in saying that poor Ford is rather an unusually honest little man, as such men go. When, however, Mr. Lee innocently cries, "Who will want to fight us?" because Ford cars might be made cheap enough for the working classes, I respectfully inform him that he has not the faintest idea of what fighting is all about. There is not, thank God! the remotest probability of England and America fighting each other. But I will tell Mr. Stanley Lee, with the sincerity of an admirer, that rather than accept a cheap Ford car along with the cheap Ford philosophy and the cheap and chippy Ford ideals of life, not only I, but nearly every man who earns his living in Europe, would see the whole story of the white man wiped off the world in blood.

master a bloody-minded maniac. That is why there is war in Europe at this moment: simply because the Germans are as certain that they are the natural masters of mankind as we are certain that they aren't. But it must be insistently noted that the quarrel is one about spirit and quality, and cannot be dissipated by any discoveries about facts. The kind of madman who thinks he is an angel does not necessarily, or generally, think he has wings. Similarly, Germans do not actually think that Frenchmen have tails. But they do think that Frenchmen have the small vivacity and malice of monkeys; that they are a breed inferior to the German, in the same aboriginal sense as in the case of monkeys. And to this there is no answer except that Frenchmen do not think so; that persons conventionally considered sane and acquainted with Frenchmen do not think so; that, in fact, nobody in the world does think so, except the German who says so. But since, by his own hypothesis, he is the only person who is qualified to judge, of course he goes on saying it. He also goes on acting on it; and he had no more scruple about breaking a treaty to stab the French in the back than about setting a trap to catch a monkey by the tail. It is not I who say this of the Prussian moralist, but he. Again and again he has asserted that only Germans can judge of German morality, just as we should say that men must be the judges of justice or mercy to monkeys. But the fact to be emphasised is that this sense of the superiority of German civilisation is a purely spiritual obsession, and cannot be proved or disproved. The barbarians of Berlin do not actually think that their wooden *Hindenburg* is made of gold. They only think he is as good as gold, while everybody else thinks he is lumber. There is no disputing about tastes—that is why there is fighting about them. The modern moral philosophy of Germany includes, among other things, an infinite faith in the force of wishing, and the denial of doubt. They hold that the wish is not only father to the thought, but father to the fact. They have a more than supernatural belief in belief. This explains the repetition of ritual phrases about power and punishment on the smallest occasions, as in the private letters to Von Papen. The modern German shuts his eyes and tries to feel like a blind fate. He blows his own trumpet in order to deafen himself.



THE GREAT DYKE-BURST FLOODS IN HOLLAND: WRECKED FISHING-BOATS IN THE HARBOUR OF MARKEN.

There is something peculiarly desolating and alarming when men and women find themselves at the mercy of the elements; and some of the scenes during the recent great floods in Holland were very painful, and even those which entailed no loss of life proved disastrously destructive. Our illustration shows the overwhelming of fishing-boats in the Isle of Marken, where the town was submerged and sixteen persons were drowned in their houses, in that picturesque spot so dear to artists and, through them, made so familiar to English people.—[Photograph by C.N.]

Yet I am sure Mr. Ford feels certain that we should lose nothing in a society organised according to his convictions—to say this is, indeed, merely to say that they are his convictions. And it is a conviction of the same kind which has forced the world into war; but in this case the conviction, which was a German conviction, was not only narrow, but had an intensity akin to insanity.

Mr. Stanley Lee, stepping out of his front door one fine day, may find two men wrestling for their lives, and perhaps trying to prevent each other getting at the hip-pocket for the traditional Transatlantic purpose. He may afterwards discover that one of these persons firmly believes himself to be Azrael, the Angel of Death, while his opponent believes him to be an unfortunate gentleman escaped from medical care in a strictly guarded building in the neighbourhood. Now, it is useless for Mr. Lee merely to blame both of them for fighting, or even to pity both of them for fighting. They are not engaged in any common activity at all. They do not exist, in any collective sense. They are in different universes. In one universe the Angel of Death is doing his duty and exercising his legitimate discretion, and a blasphemous Anarchist is disputing his qualifications. In another universe a perspiring private citizen is trying to

fighting about them. The modern moral philosophy of Germany includes, among other things, an infinite faith in the force of wishing, and the denial of doubt. They hold that the wish is not only father to the thought, but father to the fact. They have a more than supernatural belief in belief. This explains the repetition of ritual phrases about power and punishment on the smallest occasions, as in the private letters to Von Papen. The modern German shuts his eyes and tries to feel like a blind fate. He blows his own trumpet in order to deafen himself.

We must therefore expect the glitter of his brutality, the illusion of his omnipotence, to last much longer than it would with a people who had any modesty in the face of objective creation. On the mere facts, it might be said, the Prussian superman must already be doubting such an extraordinary superiority in himself. The answer is that the more he doubts the more he denies his doubt; that he is drilled to dismiss humility like a whisper of devils. He has to repeat "I cannot fail" like a creed—or rather, like an incantation. It is here more than anywhere else that he is at issue with the whole tradition of truth. It is childish to deny his physical courage; but he has no real moral courage. "I cannot fail" means in reality "I dare not fail."

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FOR, 383; AGAINST, 36: THE MILITARY SERVICE (No. 2) BILL PASSES ITS THIRD READING IN THE HOUSE OF COMMONS.

DRAWN BY S. BEGG, OUR SPECIAL ARTIST IN THE HOUSE.



THE MANY "AYES" GOING INTO THE LOBBY TO VOTE; THE FEW "NOES" WAITING FOR A CLEAR PASSAGE: THE DIVISION ON THE THIRD READING OF THE "COMPULSION BILL."

There was a significant absence of excitement in the House of Commons when the Bill involving a most momentous change in our national life—the compulsory principle in military service—came on for its Third Reading on Monday, January 24. The calm atmosphere of the House doubtless reflected the resolute spirit of the nation and its settled purpose to carry on the war to a successful conclusion. The official title of the measure, which is sometimes called, loosely, the Compulsion Bill, is the Military Service (No. 2) Bill. At the Third Reading the Government obtained a majority of 347, the number of votes being—for the Third Reading, 383, and against, 36. It may be recalled that on the First Reading the total of votes against the Bill was 105, including a number of Irish Nationalists. On the Second Reading the Irishmen, following Mr. Redmond's lead, abstained, as also did some Radicals, and the

number against the Bill fell to 39. At the Third Reading the opposing minority consisted of 30 Liberals, headed by Sir John Simon, 5 Labour Members, and 4 Independent Nationalists. The tellers were Mr. J. H. Thomas (Labour) and Mr. J. H. Whitehouse (Liberal). Just before the Division, Mr. Bonar Law said: "There is throughout the whole country a complete realisation of what the war means, and a complete determination that whatever steps are necessary to win, however repugnant they may be to preconceived ideas, shall be carried out." In the background of the picture are seen the many "Ayes" making their way to the Lobby to vote. The few "Noes" are seen, for the most part, in their places, waiting until the "Ayes" have left a way free for them to go into the Lobby on the opposite side of the House.—(Drawing Copyrighted in the United States and Canada.)

"THE ENEMY CARRIED OUT AN EXTREMELY VIOLENT BOMBARDMENT": THE PRICE OF GERMAN ACTIVITY.

PHOTOGRAPH BY THE PHOTOGRAPHIC SECTION OF THE FRENCH ARMY; SUPPLIED BY NEWSPAPER ILLUSTRATIONS.



AFTER THE ACTION: STEEL-HELMETED FRENCH RED-CROSS MEN REMOVING WOUNDED FROM AN ADVANCED FIRST-AID POST IN A RUINED VILLAGE TO THE FIRST-LINE AMBULANCE-STATION.

After a period of comparative inactivity, or, at least, of abstinence from making infantry attacks in force, the Germans are again showing signs of aggressive activity. On January 23, according to the French official *communiqué*, on the Flanders front, after "an extremely violent bombardment, in the course of which he fired no fewer than 20,000 shells. . . the German infantry tried in vain to debouch. Stopped by our curtain fire, the enemy did not leave his trenches, with the exception of a few parties which our fire immediately dispersed. Elsewhere, also, the enemy was in each case either thrown back by our infantry and machine-gun fire, supported by artillery," or "stopped short by grenades and rifle-fire."

Costly as is the price paid by the Germans—and that it is a heavy one the reports of train-loads of wounded passing through Belgian towns for Germany show—they mean losses to the French from the artillery-fire. Our illustration shows one of the scenes to be witnessed after such a bombardment as that mentioned in any of the ruined villages in rear of the French lines, practically hourly every day. Red Cross bearers, steel-helmeted, like the actual combatants, as a protection against shrapnel-splinters and bullets, while at work in the fire-zone, are continually passing along with their laden stretchers as they bring in wounded from the advanced first-aid posts to the ambulance-station of the First Line.

WHERE FLOODS CHECK THE RELIEF OF KUT: THE TIGRIS CAMPAIGN.



A PLACE OF BIBLICAL TRADITION PASSED BY THE BRITISH EXPEDITION ON ITS WAY UP THE TIGRIS: EZRA'S TOMB.



LOCALLY BELIEVED TO BE THE SITE OF THE GARDEN OF EDEN: "EVE'S TREE" AT KURNA, WHERE THE TIGRIS AND EUPHRATES JOIN.



WHERE GENERAL TOWNSHEND'S FORCE HAS BEEN BESIEGED: KUT-EL-AMARA—A STREET.



HOW CASUALTIES RETURN TO THE BASE: "DRESSING" WOUNDED TURKS ON A TRANSPORT ON THE TIGRIS.



EMPLOYED BY THE BRITISH FORCES AT KUT-EL-AMARA: TWO ARAB POLICEMEN.



A FIELD-AMBULANCE HALTING ON THE MARCH IN MESOPOTAMIA: BOXES OF SURGICAL MATERIALS MARKED WITH THE RED CROSS.



A WELCOME SIGHT TO MEN CAMPAIGNING IN FAR-DISTANT LANDS: THE ARRIVAL OF THE MAILS AT AHAZ CAMP.

The India Office announced on the 24th: "General Aymer attacked the Turkish position at Es Sinn (near Kut) on the 21st, and fierce fighting continued during the day with varying success. . . . Owing to the floods it was impossible to renew the attack on the 22nd. . . . The casualties . . . are reported to have been very heavy on both sides." A later communiqué stated: "An armistice was concluded for a few hours on January 22 for the removal of the wounded and the burial of the dead. During the last 48 hours the Tigris had risen 7 ft. at Kut and 2½ ft. at Amara, and prevented all movements of troops by land. General Townshend reports that he has sufficient supplies. His troops have not been further engaged." Kut-el-Amara (often briefly called Kut)

stands on the Tigris about midway between Bagdad and Amara (from which it must be carefully distinguished), about 100 miles distant from each as the crow flies. Amara is some 60 miles, and Ezra's Tomb about 28 miles, above Kurna. In the advance, the Expedition reached a point 5 miles north of Ezra's Tomb on June 1. "Nothing," wrote a "Times" correspondent . . . "will shake the local conviction that in Kurna, at the junction of the Tigris and Euphrates, Mesopotamia possesses the original Garden of Eden, though units of the garrison who occupied its defences during the torrid months of May and June express doubts . . . pandering only so far to local opinion as to apply such names as 'Serpent's Corner,' 'Temptation Square,' etc., to its more important thoroughfares."

H.M.S. "SIMULATION"! AN IMITATION BRITISH WAR-SHIP.

PHOTOGRAPH BY TOPICAL.



A DUMMY BATTLE-SHIP: AN AIDE TO THE NAVY AT MUDROS—NOW A WRECK; AND FORMING A BREAKWATER.

This peculiarly interesting photograph was taken at Mudros, in the island of Lemnos, which, as it is now generally known, served as a naval and military base for the Allied forces at the Dardanelles. The deep inlet of the sea running up into the centre of Lemnos, on the shores of which the town of Mudros stands, afforded a convenient anchorage for all classes of shipping employed in connection with the Dardanelles

expedition. War-vessels, large and small, transports and store-ships, despatch and hospital-ships, all made use of the anchorage, while depôts of supplies were established ashore. Lemnos was under Turkish rule until the war of 1912, and its cession to Greece after the First Balkan War had not been completely acquiesced in by Turkey when the present great war broke out.

SCIENCE AND NATURAL HISTORY.



DISPUTED: AUTHOR OF FIVE THOUSAND WORDS: GREEK, THE ARABIAN ALPHABET.



PUNISHING THE REBELS: THE EGYPTIAN'S BOOKS ON CHEMISTRY BURN'T BY ORDER OF DIOCLETIAN.



AUTHOR OF AN ENCYCLOPÆDIA OF MEDICINE: RHASES, THE ARABIAN PHYSICIAN.

SCIENCE JOTTINGS.

DOES THE HOUSE-FLY HIBERNATE?

SOME time ago, in this column, I briefly summarised the dangers to which we were exposed from the invasions of the house-fly, and one or two of my readers were good enough to write to me expressing a hope that I would return to this theme. I do so, however, not so much to give as to seek information.

For some time past one of my colleagues at the British Museum—Dr. Gahan—has been carrying on a correspondence in the Press in regard to the fate of house-flies and bluebottles in the winter, and the source of the legions which appear on the return of spring. It is contended that these are, in part at any rate, derived from pupæ which have passed the winter in a state of suspended animation, and in part from eggs laid by adults which have survived the winter by hibernating. One might have supposed, having regard to the ubiquitous distribution of these flies, that there would have been little or nothing to add to what was known of their life-history; but this is far from being the case. This matter of whether they hibernate or not is one of the gaps in our knowledge which must be filled up as soon as possible, for it is of vital importance to us all.

It has been definitely stated in the Press that both house-flies and "bluebottles" have been taken in houses either in a state of hibernation or assembled there for that purpose; but, as a matter of fact, there is as yet no evidence whatever that this is the case. A certain number of these insects, doubtless, contrive to spend the winter very comfortably in bakehouses and other places where continuous artificial heat and food can be found; but such refuges are negligible factors of survival. During the past week or two several consignments of supposed house-flies have been sent to Dr. Gahan which had been taken from dwelling-houses, but in no case did any of these contain a single house-fly. In one case over 200 flies were sent. These formed a sample of hordes of similar flies which had been found hibernating under the roof of a house, clinging to the wooden slats to which the slates were nailed. Of these insects about 80 per cent. proved to belong to a species known as the "Cluster-fly" (*Polina rudis*); the remaining 20 per cent. belonged to two or three other species; but there was not a single house-fly or bluebottle among them. It is not generally known that two or three other kinds of fly which, to the ordinary observer, look exactly like house-flies actually do frequent our houses and do hibernate there.

It is obvious, then, that no statements in regard to the hibernation of these flies can

be seriously considered unless the specimens have been identified by an expert. This, however, does not mean that the matter is one which had best be left to the expert entirely to deal with. Far from it, the public can render most valuable aid in this endeavour to complete our knowledge of the life-history of the house-fly and the bluebottle, by sending, to the British Museum of Natural History,

any flies taken during the next few weeks which seem to be house-flies or bluebottles. And each consignment should be accompanied by full details of the manner and place of capture.

It seems strange that so much uncertainty should exist as to what happens to these insidious foes of ours when the chill of autumn sets in, but the fact remains that this has yet to be discovered, and the acquisition of that information is of vital importance to us. It seems unlikely that any considerable number of house-flies, at any rate, pass the winter in a dormant state, or hibernating. A few may contrive to hide in houses, stowing themselves away in cellars or in stables. Here, at any rate, seems to be the most likely place to search.



A DISEASE-SPREADING INSECT AS TO WHOSE MYSTERIOUS WINTER HABITS THE PUBLIC ARE INVITED TO SEND INFORMATION TO THE NATURAL HISTORY MUSEUM: A BLUEBOTTLE (MUCH MAGNIFIED).

The evidence in regard to blow-flies is in a no less unsatisfactory state. A statement has been made in the Press to the effect that a number of these were found hibernating under the bark of an oak-tree, in association with queen-wasps. The latter were found to be completely torpid, but the flies moved about briskly when disturbed, though they did not attempt to take wing. These may have been blow-flies or bluebottles, but the identification cannot be regarded as established—mistakes are so easily made by those who are not experts.

So far as the evidence goes, we are compelled to assume that these flies pass the winter in the pupal or "chrysalis" state, all adults having died in the late autumn. This is the normal method of carrying on the race among insects. Many, of course, such as wasps and bees, ensure survival through the females, or "queens," which, creeping into some sheltered cranny, fall into a state of torpor in the late autumn, to revive in the spring to lay eggs. Whether the house-fly or the bluebottle

commonly, or even rarely, behaves in like manner remains to be seen. Some of my readers may, perhaps, be able to help us in arriving at a decision on this point.

The "cluster-fly," to which reference has been made, apart from its likeness to the house-fly, is an exceedingly interesting insect. And this because its larva is said to feed not only on excrementous matter and on decaying vegetable matter, but—and this is really remarkable—it has also been described as a parasite upon a species of earthworm, *Allobophora chlorotica*. The adult fly differs from the common house-fly in its somewhat larger size and darker colour, and when at rest the wings are folded more closely over the back, while it is more sluggish in its movements. It has a disagreeable habit of swarming into country houses in the autumn, possibly for the purpose of hibernation.—W. P. PYCRAFT.



HOW THE DANGER OF DISEASE FROM GERMS CARRIED BY FLIES IS TAUGHT TO SCHOOL-CHILDREN: A COMMON HOUSE-FLY, WITH LEGS CLOGGED WITH DIRT, DRAWN ON A BLACKBOARD AT CANONBURY ROAD COUNCIL SCHOOL, ISLINGTON.

THE FOKKER: THE MOST-DISCUSSSED ENEMY FIGHTING AEROPLANE.



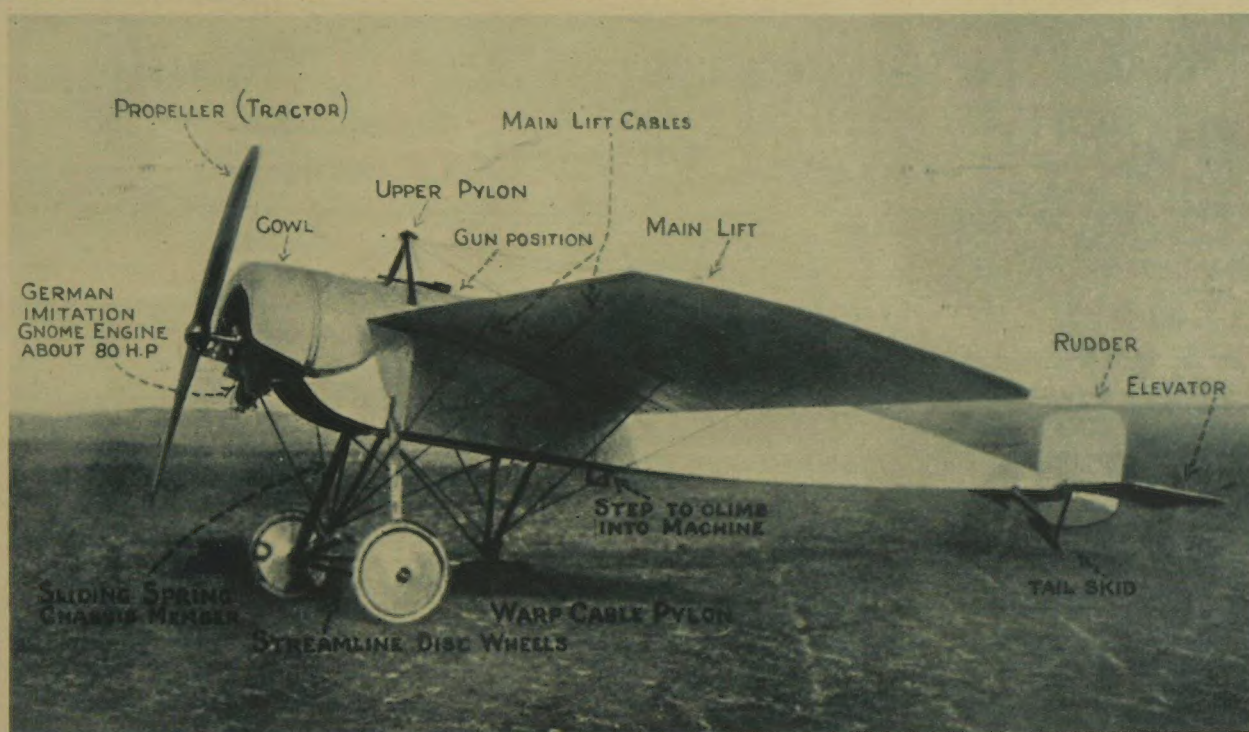
VERY FORMIDABLE IN ITS LATEST FORM:
A FOKKER MONOPLANE IN FLIGHT.



RESPONSIBLE (IN ITS NEW TYPE) FOR A RECENT INCREASE
OF R.F.C. CASUALTIES: A FOKKER IN FLIGHT.



A "FOKKER" IN FLIGHT NEAR BERLIN:
ABOVE THE JOHANNISTHAL AERODROME.



SHOWING THE POSITION OF THE GUN, WHICH IS PLACED SO THAT IT CAN BE FIRED DIRECTLY AHEAD "THROUGH" THE PROPELLER-BLADES:
A FOKKER AEROPLANE, WITH THE DETAILS OF ITS CONSTRUCTION NAMED.



SAID NOW TO CARRY A 200-H.P. ENGINE:
A FOKKER IN FLIGHT.



THE YOUNG DUTCHMAN WHO INVENTED AND GAVE HIS NAME TO THE FAMOUS
AEROPLANE: MIJNHEER FOKKER STANDING BY ONE OF HIS MACHINES.



BELIEVED TO BE MATCHED BY A NEW
BRITISH MACHINE: A FOKKER IN FLIGHT.

There has been a great deal of discussion about the new type of high-powered Fokker aeroplane, which the Germans recently put into the air, with, it seems agreed, a resulting increase in the casualties of the Royal Flying Corps. The recent air-raids on Kent have still more quickened the interest in the subject, although it is not known whether the raid made in the night was carried out by a Fokker, and it had been previously stated by Mr. Tennant in Parliament that the Fokker was "incapable of a long flight away from its own lines." It is reassuring to note that a later (unofficial) report states that the British airmen possess a fighting-machine quite equal to the Fokker, and that, in fact, they have successfully overcome it on several occasions. The position of its

gun, firing directly ahead through the propeller, is not a novelty, but was copied from a British machine. The Fokker's chief advantage is the great power of its engine—said to be a 200-h.p. Mercedes, which makes it faster than all but a few British machines and able to climb higher. The new type of Fokker is believed to be almost an exact copy of the Morane used by Garros and captured by the Germans. Our photographs are naturally not of the latest type of Fokker, but show some of the earlier machines of that name. It is understood that the German pilots of Fokker machines have had orders to destroy their machines if they are in danger of falling in or behind the Allied lines, so as to preserve the secret of their construction.

MAINTAINING BRITISH SUPREMACY IN THE AIR: A BATTLE-

PLANE BRINGS DOWN A GERMAN MACHINE AND FIRES IT.

DRAWN BY JOHN DE G. BRYAN.



DARING WHICH WON THE PILOT THE VICTORIA CROSS: SECOND-LIEUTENANT INSALL
THE GERMANS' MACHINE BURNING, AFTER BEING

The official account of the gallant act which won the Victoria Cross for Sec. Lieut. Insall is as follows: "Sec. Lieut. Gilbert S. M. Insall, No. 21 Squadron, Royal Flying Corps: Conspicuous bravery, skill, and determination on November 7, in France. He was patrolling in a Vickers fighting-machine, with First-Class Air-Mechanic T. H. Donald as gunner, when a German machine was sighted, pursued, and attacked near Achiet, between Arras and Albert. The German pilot led the Vickers machine over a rocket battery, but with great skill Lieut. Insall dived and got to close range, when Donald fired a drum of cartridges into the German machine, stopping its engine. The German pilot then dived through a cloud, followed by Lieut. Insall. Fire was again opened and the German machine was brought down heavily in a ploughed field four miles south-east of Arras. On seeing the Germans scramble out of their machine and prepare to fire, Lieut. Insall dived to 500 feet, thus enabling Donald to open heavy fire on them. The

DIVING TO ENABLE HIS MACHINE-GUNNER TO FIRE ON THE FLEEING ENEMY—
HIT BY A BOMB FROM THE BRITISH PLANE.

Germans then fled, one helping the other, who was apparently wounded. Other Germans then commenced heavy fire, but in spite of this, Lieut. Insall turned again and an incendiary bomb was dropped on the German machine, which was last seen wreathed in smoke. Lieut. Insall then headed west in order to get back over the German trenches, but as he was at only 2000 feet altitude, he dived across them for greater speed, Donald firing into the trenches as he passed over. The German fire, however, damaged the petrol-tank, and with great coolness Lieut. Insall landed under cover of the wood 500 yards inside our lines. . . . Much damage had . . . been caused by rifle-fire, but during the night it was repaired behind screened lights, and at dawn Lieut. Insall flew his machine home with Donald as a passenger. About a month after this exploit, Mr. Insall was reported missing, and it was announced the other day that he was a prisoner in Germany, wounded. Donald was captured at the same time. (Drawing Copyrighted in the United States and Canada.)

"MINES" LAID BY NATURE. NOT BY MAN: A VOLCANIC CRATER IN ERUPTION—AND RESEMBLING A MINE-CRATER!

PHOTOGRAPHS BY G.P.U.



1. LIKE A PHOTOGRAPH OF A MINE-CRATER—WITH A SNELL EXPLODING IN IT: THE VOLCANO POAS IN ERUPTION—THE FIRST PHASE.

2. LIKE THE WHITENING CLOUD OF A MINE EXPLOSION AFTER THE EARTH AND DEBRIS HAVE FALLEN: POAS IN ERUPTION—THE THIRD PHASE.

3. IN THE ACTIVE CRATER OF A COSTA RICA VOLCANO THAT RESEMBLES A MINE-CRATER: AN ERUPTION OF MOUNT POAS—THE SECOND PHASE.

4. FOR COMPARISON WITH THE EFFECTS OF THE EXPLOSION OF A MILITARY MINE: A SUCCEEDING PHASE OF THE ERUPTION OF MOUNT POAS.

Since the war began, we have on various occasions illustrated, either by photographs or drawings, the explosion of military mines or shafts of large calibre, and the "craters," or pits, which they form in the ground. The photographs given above indicate the accuracy of the metaphor from volcanic phenomena used to describe such effects of modern high-explosive charges. The first phase, in particular, of the eruption here illustrated is remarkably similar to the cloud of earth and debris thrown up by the bursting of a subterranean mine. The bright, sword-like character of the shape first taken by the upthrust mass is especially noticeable as a point of comparison. Later, the cloud assumes a whiter hue, and a rounder and more rolling form, rather resembling ordinary white massed clouds in an otherwise clear sky. As regards the crater, the only marked point of difference between the

mines laid by Nature and those laid by man would seem to be that, in this case, at any rate, the volcanic crater was already in existence when the upthrust occurred, having been formed by previous eruptions, while the "crater" of a land-mine is, of course formed by its bursting, and does not exist before. Mount Poas (otherwise called Los Volcanes on which our photographs were taken, is a volcano in Costa Rica, Central America, about 8675 feet in height. It is one of the Sierra Talamancana range, some of whose peaks attain a great altitude, the highest being over 12,000 feet. The chief active volcanoes of the range are Irazu and Turrialba. Costa Rica suffers from frequent earthquakes. The worst in its history was that of May 4, 1910, which destroyed the towns of Garago and Paraiso with many hundreds of lives.

IN ACTION AGAINST THE ENEMY IN THE AIR: FIGHTING RAIDERS IN A VILLAGE BEHIND THE FRONT.

DRAWN BY A. C. MICHAEL, FROM A SKETCH BY AN OFFICER PRESENT AT THE ACTION.



IN A WAR-ZONE WHICH HAS SEEN AS MANY AS NINETEEN AIR-FIGHTS IN A DAY! BRITISH ANTI-AIRCRAFT QUICK-FIRERS ON ARMoured CARS SHELLING TAUBES.

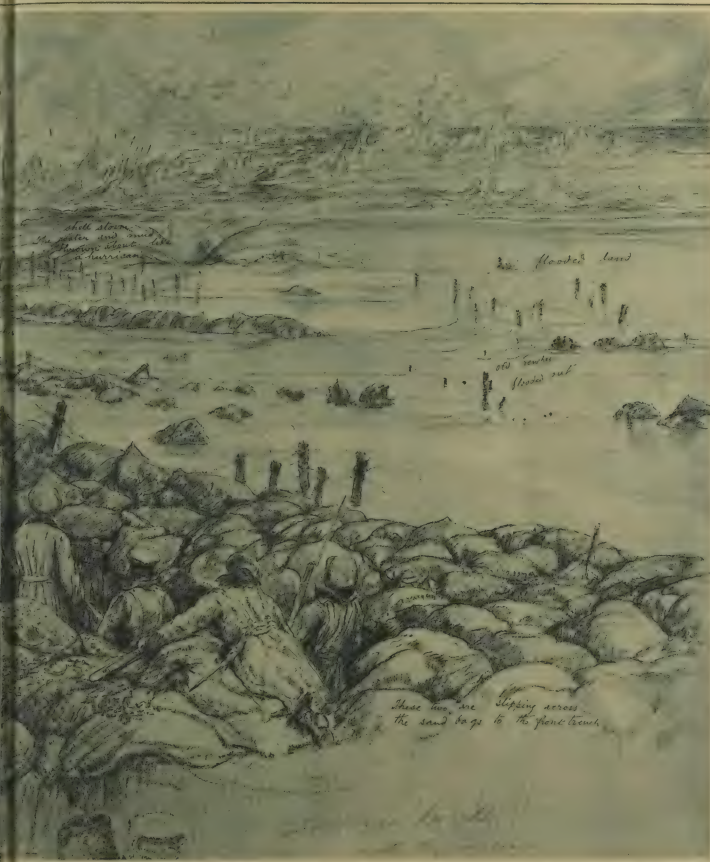
Air activity is universal in the Western war-area just now. At the front in Flanders, the appearance of the now notorious "Fokker" aeroplane in its newest form seems certain to be effectively countered by a new type of British aeroplane which, also, has just made its appearance, and has defeated three Fokkers. Again, recent official messages from the front record the occurrence of no fewer than fourteen and nineteen air-actions in the vicinity of the British lines in two days. To these facts must be added the enemy's air-attacks on the East Coast of Kent, one, which met with limited success, at one o'clock on the morning of January 23; the other, which failed completely, just after noon of the same day. The latter of these two is stated to have been foiled by the defensive readiness of the local air force. The illustration above,

from a sketch made on the spot, shows one of the ways by which the enemy aeroplane-attacks on the British lines in the war-area across the Channel are countered. It was, the sender of the sketch notes, a bright, still day, and thawing after hard weather. Two enemy aeroplanes came in view while out to drop bombs on the village, a little way in rear of the British lines, seen in the background of the drawing. The two anti-aircraft guns mounted on armoured cars drove them off. Incidentally, a contrasting phase of every-day life within the war-area is shown by the details of peasants at work ploughing, and a country cart passing along the road. At no great distance off, the neighbouring hill is entrenched and crowned with barbed-wire entanglements.—[Drawing Copyrighted in the United States and Canada.]

WHEN THE HOSING SHRAPNEL SOUGHT TO BEAT OUT THE LAST SPARK OF THE ADVANCE AND THE LAST MAN.

FACSIMILE SKETCH BY H. C. SEPPINGS-WRIGHT, OF

ARTIST WITH THE RUSSIANS IN THE FIELD.



A SCREEN OF FIRE, LASHING THE WATER AND THE MUD, THROUGH WHICH COSSACKS CHARGED TO VICTORY: THE ENEMY SEEKING TO STOP THE RUSSIAN ADVANCE BY A CERTAIN RIVER.

Writing in his book, "Between the Lines," Mr. Boyd Cable says of artillery support: "The advancing Germans reached at last the strip of ground where his (the Forward Officer's) shrapnel hailed and fished, reached the strip and pushed into it—but not past it. Up to the shrapnel-zone the advance could press; through, it could not. Under the shrapnel nothing could live. It swept the ground in driving gust on gust, swept and beset it bare of life. Here and there, in ones and twos and little knots and groups, the Germans stood desperately to push on. They came as far as that deadly fire-belt; and in ones and twos and little knots and groups they stayed there and died. Supports hurried up and buried themselves in, and a spasm of fresh strength and fury lifted the line and heaved it forward. So far, the fire of its fury brought it; and there the hissing shrapnel met it, swept down and washed it away."

and beat it out to the last spark and the last man." That is precisely the artillery support with which the Germans sought to protect themselves from the advancing Russians on the occasion of the battle illustrated. The only difference is that the Russians broke the screen of fire. As to the drawing, it may be noted that the *level* of the fighting must not be named. A supposedly impassable barrier to attacking troops as the inundated and obstacle-strewn terrain looks, it was the scene of a Russian victory not long ago. The fight took place on the banks of "a certain river," where the Germans (whose general position extended over the background) made a determined effort to keep back the Russians. "The shell-cannon," writes our artist, "delayed the march but only for a few hours. Through this hell, a large body of regular Cossacks charged and won the heights on the left." (*Copyrighted in the United States and Canada.*)

INTRICACIES OF THE MODERN PROJECTILE: SHELL

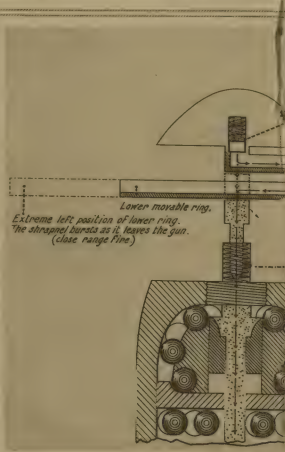
FUSES—HOW THEY ARE MADE AND HOW THEY WORK.



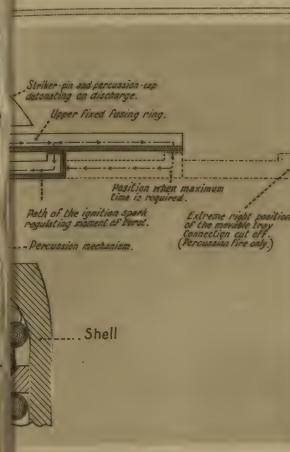
THE APPARATUS IN A SHELL'S "NOSE" WHICH MAKES IT BURST: A SCHNEIDER PERCUSSION-FUSE.



A SCHNEIDER PERCUSSION-FUSE IN SECTION: (FROM TOP) STRIKER-PIN, SAFETY-SPRING, PERCUSSION-CAP, AND POWDER.



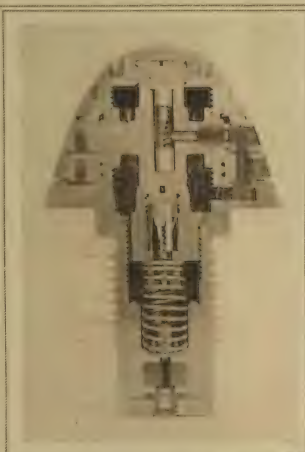
THE SCHNEIDER DOUBLE-PURPOSE FUSE (TIME AND A SECTIONAL



PERCUSSION COMBINED ON THE TRAY SYSTEM: DIAGRAM



DETONATING EITHER AT A FIXED TIME OR ON CONTACT: A SCHNEIDER DOUBLE-PURPOSE FUSE.



A SCHNEIDER DOUBLE-PURPOSE FUSE IN SECTION: THE MECHANISM BY WHICH THE TIME OF BURSTING IS REGULATED.



WOMAN'S PART IN MAKING MUNITIONS: A FRENCH GIRL MAKING BRASS STRIKER-PINS FOR FUSES—SHOWING THE TRAY INTO WHICH THEY FALL.

IN days gone by, when spherical shells were fired from smooth-bore guns, a simple form of percussion-fuse was employed, consisting of a fragile vessel of sulphuric acid surrounded by a quantity of chlorate of potash situated in the centre of the bursting charge. The shock of impact fractured the acid-container, and the contact of the acid with the chlorate of potash produced the flame which fired the bursting charge. A suitable length of "slow match," or fuse, whose outer end was in contact with the propelling charge of the gun and was lighted from it, carried the fire, after an interval depending on the length of the "slow match," to the bursting charge of the shell; in this way a crude form of time-fuse was constructed. When the smooth-bore was superseded by the rifled gun, the use of a conical projectile became possible, the action of the rifling causing the shell to revolve rapidly on its axis, and so, by the gyroscopic action of its mass, to travel nose-first. This definite position during flight being



PARTS OF A PERCUSSION-FUSE: (FROM LEFT TO RIGHT, IN FRONT) COMPRESSED-POWDER DISCS, PERCUSSION-CAP.

secured, the design of suitable fuses of a more complicated nature became an easier matter, as the shell could be relied upon to strike the target with its nose. In most of the systems at present in use the working is based on the principle of inertia at the start or finish, and consists, broadly, of a floating block of metal carrying a percussion-cap, this block being normally kept apart by a coil-spring from a striker-pin fixed in the interior of the fuse-body at its forward end, and, in the case of the percussion-fuse, pointing backwards. Suitable safety devices are employed to keep the cap and the striker definitely apart until these safety devices are removed automatically as the shell leaves the gun. When the projectile strikes a target progress is checked, but the momentum of the floating block causes the latter to continue its forward course against the action of the coil-spring and so fire the percussion-cap by bringing it into contact with the striker. The photographs illustrate both time and percussion fuses.



MUSLIN CONFETTI, BLOTTER-PAPER WASHERS, BRASS WASHERS, CARRIERS, AND (FURTHER ON) A STRIKER-PIN.



FRENCH WOMEN MAKING SHELL FUSES: COMpressING THE POWDER-PRIMERS WHICH ARE IGNITED BY THE PERCUSSION-CAPS, AND WHICH, IN TURN, COMMUNICATE THE FIRE TO THE DETONATORS.

The modern shell, especially that part of it called the "nose," which contains the fuse that causes the charge to explode, is a very complicated and delicate piece of mechanism. As mentioned in the article on the subject which appears on another page of this number, "a fuse may be one of three kinds: (1) A time-fuse, which causes the shell to explode after a given interval has elapsed since the fuse was lighted; (2) A percussion-fuse, which acts instantly when the shell strikes an object; or (3) A combination or double-purpose fuse, which may be employed in either of the above ways at the discretion of the artilleryman. If in the last case both the devices are put into operation, the shell explodes at the pre-determined instant unless it strikes an obstacle in the meantime; in which case it bursts on impact. . . . A fuse consists of from fifteen to sixty pieces, some of which measure only two or three millimetres in diameter. They are mostly made in brass, bronze, or aluminium; and in some models small washers or rings of blotting-paper are employed,

together with minute wads of mousseline-de-soie. These parts are produced by a variety of special machines operated for the most part by women. . . . All finished parts are very closely examined and tested as to their accuracy before being assembled, as variations are certain to occur, no matter how excellent the producing machinery may be, and a very minute variation in one or other of its details might destroy the efficiency of the finished article. . . . The difference between the size of the maximum and minimum gauge is, in the case of the most accurate parts, as little as one-fortieth of a millimetre, and the admissible error on the rougher articles is only one-tenth of a millimetre. The machining of all the parts of a fuse involves, in some types, upwards of 400 operations. Women are very largely employed in assembling or putting together the component parts, and an extraordinary amount of patience is required in some of the operations, as the parts handled are so very small."

THE SEA POWER OF THE UNITED STATES: A NAVY COLONEL

PHOTOGRAPH BY E. MULLER, JR.; COPYRIGHT



THE UNITED STATES NAVY: I.—TARGET-PRACTICE BY THE DREADNOUGHT

It is increasingly evident that a great effort is to be made to strengthen the United States Navy and Army. It may be mentioned in this connection that the chief feature of the recent annual report of Mr. Daniels, Secretary of the U.S. Navy, was a recommendation for the adoption of a five-year building programme. He advocated the construction between 1917 and 1921 of ten Dreadnoughts, six battle-cruisers, ten scout-cruisers, fifty destroyers, fifteen fleet-submarines, eighty-five coast-submarines, four gun-boats, a hospital-ship, two ammunition-ships, two fuel-oil-ships, and a repair-ship. Later it was said that the United States Navy Department had decided that a displacement of 35,000 tons should be the limit for any future American Dreadnought (the "Queen Elizabeth" has a displacement of 27,500 tons). There have been rumours, nevertheless, of future American battle-cruisers of

ROOSEVELT WOULD SEE SECOND ONLY TO GREAT BRITAIN'S.

IN THE UNITED STATES AND CANADA.



'MICHIGAN'—THE SPLASHES MADE BY THE SHELLS STRIKING THE WATER.

40,000 tons, with a speed of 35 knots. Meantime, Colonel Roosevelt, in a magazine article, urges the United States, as part of its plan of "preparedness," to build a navy second only in strength to that of Great Britain. He adds a comment as to the present vulnerability of the United States on land and sea; and argues that there is no need to build a navy greater than ours for two reasons. The first of these is that England is not a military power in the true sense of the word; the second is that the possibility of a development of unfriendly relations between the United States and Great Britain is too remote to be taken into consideration in calculating the necessary defences of the American people. The remarkable photograph reproduced above is the first of a series we shall publish in "The Illustrated London News."

"FISHING FRITZ OUT": A REPLY TO "BARALONG" CHARGES.

PHOTOGRAPHS BY C.N.



SAVING TWO OF THE 1150 GERMAN SAILORS RESCUED BY THE BRITISH NAVY DURING THE WAR: HAULING A DROWNING ENEMY ON BOARD ONE OF OUR SUBMARINES.



MORE GERMAN SAILORS RESCUED FROM DROWNING BY THE CREW OF A SUBMARINE: AN OBJECT-LESSON IN THE HUMANITY OF THE BRITISH NAVY.

In the course of his scathing reply to German accusations regarding the destruction by H.M.S. "Baralong" of a German submarine which had attacked the British steamer "Nicosian," Sir Edward Grey said: "His Majesty's Government do not think it necessary to make any reply to the suggestion that the British Navy has been guilty of inhumanity. According to the latest figures available, the number of German sailors rescued from drowning, often in circumstances of great difficulty and peril, amounts to 1150. The German Navy can show no such record—perhaps through want of opportunity." In

the upper photograph two of a British submarine's crew are hauling in a drowning German by a life-line. In the foreground stands another already rescued. A similar scene is shown in the lower photograph. As Kipling makes some British submarine officers say, in his "Fringes of the Fleet": "If Fritz only fought clean, this wouldn't be half a bad show. But Fritz can't fight clean. 'And we can't do what he does, even if we were allowed to.' 'No, we can't. 'Tisn't done. We have to fish Fritz out of the water, dry him and give him cocktails, and send him to Donington Hall.'"

FOR KING AND COUNTRY: OFFICERS ON THE ROLL OF HONOUR.

PHOTOGRAPHS BY ELLIOTT AND FRY, CHANCILLOR, N. L. LANGFIER, LAPAYETTE, H. WALTER BARNETT, RUSSELL, LANGFIER, LTD., AND FREDERIC ROBINSON



COLONEL E. R. R. SWINEY,
Indian Army. Lost on "Persia." Served
with distinction in India. Mentioned
in despatches in the present war.



MAJOR H. A. CARTER, V.C.,
Grenadier Guards. Killed in East Africa.
Won Victoria Cross near Jidballi, Somali-
land, 1904.



COLONEL J. H. KNIGHT,
North Staffordshire Regiment. A popular
member of the North Staffordshire Hunt,
and a keen rider to hounds.



MAJOR T. P. GUTHE,
R.F.A. Died of wounds at Le Touquet.
Son of Mr. J. E. Guthe, J.P., Kewick
Hall, Yorkshire



LIEUT.-COLONEL S. W. KING,
17th Infantry (Loyal Regiment). Served
on N.W. Frontier, 1897-8. Tanga Pass
(medal, with clasp).



CAPTAIN H. R. THOMAS,
R.G.A. South African War (King's
medal, five clasps). Son of Mr. H. T.
Thomas, Jamaica.



CAPTAIN H. KENNEDY CASSELS,
Royal Berkshire Regiment. Killed at
Loos. Son of Mr. W. R. Cassels, Burnos
Ayres.



MAJOR H. J. J. L. MONTEITH,
Lanarkshire Yeomanry. Had been Private
Secretary to Right Hon. Walter Long.
Local Government Board, and in Ireland.



CAPTAIN AND ADJT. T. F. THORNE,
Grenadier Guards. Son of Mrs. Augustus
Thorne, Highfield Park, Heckfield.
Officially reported killed.



2ND LIEUT. NORMAN MCGREGOR
LOWE, D.C.M.,
London Scottish. Son of Mr. Charles
Lowe, the well-known writer.



CAPTAIN A. J. B. WAVELL,
Welsh Regiment. Killed in British E.
Africa. Eldest son of Colonel A. H.
Wavell.



LIEUT.-COMM. E. O. DISNEY, R.N.,
Washed overboard from H.M.S. "Are-
thusa," in storm. Son of Mr. G. W.
Disney, Brentwood.



2ND LIEUT. H. W. EOULTON,
15th Battalion Durham Light Infantry.
Officially reported killed in action
at Loos.



CAPT. JOHN T. LODWICK, D.S.O.,
2/3rd Gurkha Rifles. Lost on the
"Persia." Won the D.S.O. at Neuve
Chapelle.



LIEUT. G. D'A. C. CLARKE,
Royal Field Artillery. Has been officially
reported killed on active service in
France.



2ND LT. H. G. F. FORSTER-MORRIS,
South Wales Borderers. Died from
wounds. Son of the Rector of Callington,
Cornwall.



CAPTAIN E. H. M. PEARSON,
12th Liverpool Regiment. Accidentally
killed in France. Only son of the late
Mr. Albert Harford Pearson.



2ND LIEUT. J. A. HARTLEY,
4th Duke of Wellington's West Riding
Regiment. Gas-poisoned in Flanders.
Son of Lieut.-Colonel and Mrs. Hartley.



2ND LIEUT. D. C. ROYCE,
Leicester Regiment. Youngest son of
Mr. G. A. Royce, Leicester. His two
brothers are serving in the Army.



MAJOR W. W. BLACKDEN,
Late R. Munster Fusiliers, att'd. Northum-
berland Fusiliers. Awarded Burma medal,
two clasps, 1885-8.

The Bursting of the Dykes in Holland: A Remarkable Photograph.



THE COLLAPSE OF THE ZUIDER ZEE DYKE DURING THE GREAT STORM: THE DYKE AS DESTROYED BY THE ONRUSHING SEA-WATER.

The floods in North Holland were disastrous in their suddenness. In some places the people were awakened in their sleep by the ringing of bells, to find themselves confronted by the intruding water. At Muiden, on the Zuider Zee, for example, an exceptionally strong wind dashed the sea-water over the dyke and broke it down,

inundating the streets and the houses. At other places, too, dykes were broken. The Zuider Zee, it is worth recalling, is about 60 miles long and 210 miles in circumference. Originally most of it was covered with forests and towns. It was inundated by irruptions of the North Sea in the twelfth and thirteenth centuries.

BY COURTESY OF "PANORAMA."

The Great Fire at Bergen: Enormous Damage in Norway's Second City.



BERGEN ON FIRE: LOOKING DOWN UPON THE CITY WHILE MUCH OF IT WAS ABLAZE.

The great fire at Bergen, Norway's historic and second largest city, did enormous damage. The flames spread rapidly, fanned by a strong north-easterly gale, and even the parks and open spaces could not arrest the advance of the fire. Before long, half the city was ablaze, and it is remarkable that, as far as is known, only one life was lost. The electric-power station caught fire, and all the lights went out. The

whole of the central part of the city, the most important business district, took fire; but the railway station was saved, together with the chief telegraph office, the theatre, the town hall, the exchange, and the museum. The fire lasted from six o'clock in the evening until two o'clock on the following day. By that time, although still burning, it was under control. The damage is probably between five and six million pounds.

PHOTOGRAPH BY C.N.

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HAVE A WORLD-WIDE REPUTATION.

They are made from fine quality Virginia Tobacco and sold in two strengths—MILD and MEDIUM.

MILD (Gold Leaf) 100 for 3/8; 50 for 1/10 MEDIUM. 100 for 3/-; 50 for 1/7
 Smaller sizes of packing at proportionate prices.

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For Wounded British Soldiers and Sailors in Military Hospitals at Home and for the Front at Duty Free Rates. Terms on application to JOHN PLAYER & SONS, Nottingham.

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MISCELLANEOUS.

EXILED Belgians to whom this country has been proud and happy to afford hospitality have not been slow to express their thanks. The expression has been, in fact, sometimes almost overpowering to our taciturn habits, but always genuine and from the heart. It takes a monumental and altogether charming form in "A Book of Belgium's Gratitude" (John Lane), which contains numerous articles by representative Belgians, with English translations by various well-known people. The volume is illustrated throughout, in colour and in black and white, by Belgian artists. The frontispiece, by André Cluysenaar, is a fine symbolical picture of Britannia sheltering a Belgian mother and her baby, against a background of a burning town. Among the many other colour-plates, a particularly beautiful one is a landscape entitled "Clair de Lune sur La Tamise," by Alfred Bastien, an artist who has done much excellent war work for our papers. The articles deal with such subjects as the work of British women, the Refugees Committee, America and Colonial aid to refugees, Oxford and Cambridge, Scotland, British music, and so on. Autograph tributes from the King and Queen of the Belgians, the Duchesse de Vendôme, and Princess Clémentine, are reproduced in facsimile. Apart from its special purpose, the book is remarkably interesting as presenting a friendly picture of British life as it appears to our guests, and of their own attitude towards us and the state of Europe.

It was very desirable that an illustrated record of that "finest feat ever performed by British Arms," as Sir Ian Hamilton said, the work of our soldiers in Gallipoli, should be obtainable, and such may be found in "The Dardanelles: An Epic Told in Pictures," published at 2s. 6d., by the Alfieri Picture Service, 4-7, Red Lion Court, Fleet Street, E.C. The story is told in a hundred photographs illustrating the Gallipoli phase of the war, and the text consists

of extracts from Sir Ian Hamilton's despatch. The photographs were in many cases taken under fire, and form a valuable record of a campaign that has no parallel.

In publishing the 1916 edition of "Whitaker's Almanack," the editor of that famous volume expresses his regret for the delay in its appearance, "due largely to causes arising out of the war," also to "difficulties in the various departments of production." In time of war

and tables bearing indirectly on the war which provide very useful data. The general scheme of this indispensable book of reference remains as usual, and sustains its high reputation.

The 1916 issue, in handy, single-volume form, of "The Royal Navy List" (Witherby and Co.) follows the lines successfully adopted in consequence of the war in the previous issue. As a book of reference in regard to the personnel of the Fleet and the Service records of officers

of all branches, it fills the rôle of a "Who's Who," and is invaluable for its reliability. A feature of general usefulness and interest is the clear and sufficiently detailed narrative which fills thirty pages of the volume of the work of the British and Allied Navies all over the world during the past year, as far as it is permissible to record what has taken place. Another feature of exceptional value and of permanent utility is the special War Supplement bound up with the volume, recording the services of all officers of the Navy who have been mentioned in despatches or promoted or decorated during the war, together with a notice of the war-services of ships the names of which have come before the public, and a naval war-diary of events since August 1914.

In our issue of Jan. 15 we inadvertently referred to the late Captain W. H. F. Palmer, father of the late Captain W. H. E. H. Palmer, as of the 19th Hussars. We should have said 14th Hussars, and gladly make the desired correction.

Owing to the mistake of a photographer, and the fact that there were two officers in the Royal Navy of the same rank, name, and initials, we regret that the photograph in our issue of Jan. 15 described as that of Lieut.-Commander G. B. Harrison, lost in the *Natal*, was in reality that of Lieut.-Commander Geoffrey B. Harrison. Lieut.-Commander Geoffrey B. Harrison has not been killed, being still on the active service list. We very willingly make the desired correction.



ASSIDUOUS WORKERS FOR THE RED CROSS: MRS. R. G. EDWARDS AND HER AIDES.

One of the finest features of the war is the alacrity with which ladies have answered the call of patriotism, devoting their time and energies, and even giving up their houses in town or country, for the tending of wounded or the work of the Red Cross. Our photograph illustrates a case in point, Mrs. R. G. Edwards, who is seen standing on the extreme right, having devoted her home, 22, New Cavendish Street, to this work. Here, every week, a number of well-known ladies meet under the auspices of the Red Cross Central Work-Rooms, Royal Academy of Arts Branch, and make up quantities of hospital garments and other necessities for our wounded.

the new facts to be embodied are naturally more numerous and complicated, but they add greatly to the book's interest and value. The list of recipients of the V.C. alone takes up two pages. The "Diary of the War," brought down to the end of last October, forms, with two articles on the naval and military operations, a connected summary of the fighting in 1915. There are a number of lists

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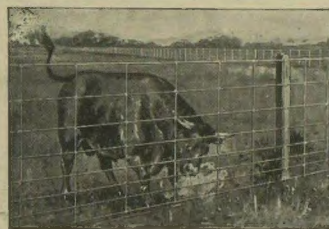


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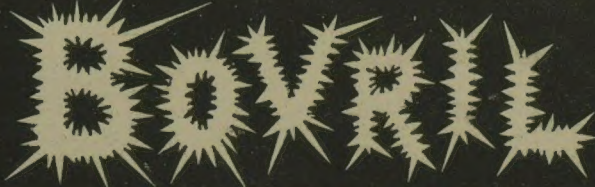
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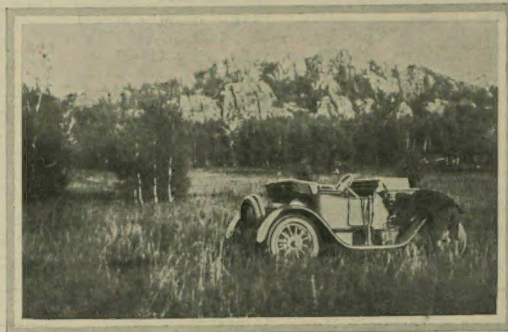


GIVES STRENGTH TO WIN.

THE CHRONICLE OF THE CAR.

Petrol Economy. A circular recently issued by the importers of Shell motor spirit asks the co-operation of the private motorist in order that the supply to the Army vehicles may be in no way jeopardised. Economy is the text, and users of cars are asked to limit their requirements of petrol to a minimum, and avoid all waste by using it with all care. Also, it will help matters if the car-owning public will refrain from the retention of a stock larger than is absolutely necessary. It is because of the large quantities often demanded from the Shell people at short notice for the use of his Majesty's Forces that some of their private customers have suffered some inconvenience, for which, however, owing to the circumstances, one can be sure no complaint will be made. Not that there is any shortage in the supplies, but the demands of the Government in regard to tank-steamers and labour generally must be attended to first.

Our Failings. Mr. Runciman deserves great commendation for bringing before the public the necessity of using British, and only British, goods. Our failing in this country is the desire always to buy as cheaply as possible, together with the reluctance to try anything new. As a leading article in the *Autocar* pointed out last week, the hold the German-made magneto had here was due partly to the fact that the public would not buy cars fitted with any other, and because the manufacturers of automobiles would not support the British magneto-maker owing to his inability to supply as cheaply as the German. Here was a case of the necessity for protection from foreign competition until the British magneto-builders had so enlarged their business that they could make their machines as well and as cheaply as the imported ones. Once the British magneto had proved its worth as a machine, which I feel confident it could have done, and the British public trusted it, the



IN PICTURESQUE RUSSIA: A "BUICK" CAR IN THE MOUNTAINS.

The scope of the motor-car is universal, but it is comparatively rare to find one in so picturesque a setting as that shown in our photograph of one of the well-known "Buick" cars among the mountains of Russia. The picture well suggests the limitless area of the modern car for purposes of both war and peace.



AN AUSTRALIAN WELCOME TO THE WOUNDED: HOME AGAIN AT SYDNEY, NEW SOUTH WALES.

Rarely has a Colonial Napier car been put to worthier use than in conveying the brave Australian wounded soldiers through the cheering crowds of Sydney on their return from the war-area which they have made historic by their heroism. The car is one of the well-known 20-h.p. extra-strong Colonial Napier models which have done such fine service in the campaign in the Near East.

German article would have stood no chance in competition, as, selling in large quantities, the British magneto could have been produced as cheaply as its competitor.

Flying Recruits. Motor-drivers and mechanics who are really skilled in their job can now join the Royal Flying Corps, as recruiting for that body has been reopened. In future, arrangements have been made for tests of skill to be carried out locally, and not necessarily at the recruiting-office in every town. A system of travelling organisation has been established, and a special party of the R.F.C., in charge of an officer, with trade-testing non-commissioned officers and men, with clerical staff, will be installed in the different commands. They will be accompanied by a motor-lorry and workshop, so that the various artificers—fitters, drivers, instrument repairers, coppersmiths, and stores men with a knowledge of engine parts—will be tested on the spot. But all particulars may be obtained from any recruiting-office.

Another Messenger.

I have received the first number of the *Crossley Messenger*, a house journal issued to their customers and friends by Crossley Motors, in order to keep in touch with the private motorists who use Crossley cars. Its message for January is: "Life for most of us is getting up in the morning and going to bed again at night, with eight

or nine more hours of Work sandwiched in between. . . . If we keep out of debt and in health, we feel we have done pretty well. And so we have—but it is not particularly exhilarating. Life, we know, must hold something more—if we had time to turn the corner, we would find Romance; if we were free to go down on the other side of the mountain, we would meet Adventure. But Work and Duty are our relentless overseers. How shall we escape them and find the happy land of Something Doing? There is a Way! Take this book home with you and find it!" Motorists might do worse than write and ask for a copy, which will be sent gratis on application to the Crossley works at Manchester.—W. W.

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LADIES' PAGE.

FOR the Red Cross Sale at Croydon, Queen Alexandra has given one of the embroidered handkerchiefs that formed part of her trousseau. In days to come such a personal gift will be highly prized as a memento of, perhaps, the most gracious and personally beloved of all the Queens-Consort in history. The King of Portugal gave for the same sale a rather curious present—namely, a copy of a sketch by Queen Victoria of her eldest daughter, who was the mother of the Kaiser. It is indeed strange that so noble a couple as the Emperor and Empress Frederick should be the parents of such a son, capable of sanctioning the extraordinary enormities of Germany in this war—such as torpedoing merchant-vessels filled with passengers. The late Empress, our Princess Royal, was hated by Bismarck just because she was ever so English at heart. To the end of her life she was wont to sign herself still as Princess Royal of Great Britain. Her son, however, was not brought up under her influence: while still a small boy he was entirely removed from her home by the old Emperor, who had the power to do so under his family laws, and acting under the advice of Bismarck. The Kaiser's behaviour to that mother, when he first succeeded to the throne, was such that Queen Victoria used to speak of her as "my martyred daughter," and ardently desired that the truth should be made known in this country, so that this Kaiser's attitude of mind towards his mother and her land should be understood. However, it is a melancholy fact that of all Queen Victoria's grandsons, only two are not in arms against her country in this war—namely, the King of England and Prince Arthur of Connaught. The present circumstances ought to prove for all time that it is idle, or worse than that, to make marriages for the daughters of a Sovereign in the hope of influencing international affairs by good feeling in the kindred royal families.

Although we are continually treated to appeals from the Government to economise in all ways possible, and although we know that the shortage of male labour in many directions is causing loss and difficulty and great demands on women for work, it is still possible to learn of two detectives being ordered by the police authorities to spend their State-paid time and manly strength in going in disguise to cheap eating-houses at Croydon in order to detect the proprietors in selling "halfpenny slices" as bread-and-butter when in fact they were bread-and-margarine! These criminals were haled into court, and the magistrates actually inflicted a substantial fine. Can one imagine a woman Chief Constable at this moment concerning herself whether some quite wholesome and nutritious fat spread on a "halfpenny slice" for a hearty labouring man's food is animal or nut butter? We are frequently assured that we should all supply the cheaper article to our own households; that it is equally nutritious, and not to be detected in flavour by the eater. Nuts, from which in the main margarine is prepared, are certainly a very nutritious form of food; and Dr. Hindhede, the food expert of the Danish Government, says categorically:



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"Margarine contains the same food value as butter, and can in every respect replace butter, giving the same amount of nourishment for about one-third the price." As to the taste, indeed, it is no use for anybody to assure me—or, no doubt, most of my readers—that margarine may always be compared in flavour with butter; we know better. But what is economy except giving up the most desirable but dearer article that we would prefer, in favour of some cheaper but wholesome substitute?

The working classes are very prejudiced about food. They know nothing of experiments such as are reported in the able and valuable publication by Dr. Langworthy, of the United States Department of Home Economics, on the digestibility of diverse fats, in the course of which several authorities are cited as stating that vegetable fat (margarine) is as well absorbed by the system as real butter. The working people are, unfortunately, apt to take it as an insult and consider themselves ill-used if they are advised to eat any food on the ground that it is cheap, though it be really as good as another. Brown bread, porridge, soup, margarine, and so on are despised merely because they are understood to be cheap foods. It is middle-class housewives who will be glad to learn that, so far as the question has yet been inquired into, cheap nut-margarine is believed to be as nutritious as the most expensive butter. But further experiments on "butter substitutes" are needed, and are now being made by the United States official "Home Economics" Bureau, the very valuable work of which is made known and useful to all the world.

Millinery for spring is peeping out already, and the few new models are all of delightful simplicity so far as the trimmings are concerned. The shapes, however, are many of them very high and quite pointed, rising at the back of the head to a sort of Alpine peak of ribbon. One attractive model was entirely covered with Tsar violets except at the extreme back, where a double fold of wild hyacinth-coloured satin ribbon rose in a tall peak. An untrimmed straw shape fitting to the head like the "pudding basin" metal helmets of the French soldier was of blue and golden straw plait, and was provided with a chin-strap of blue moiré ribbon, hooking up to the hat under a rosette over the left ear. Another helmet-shaped straw in golden brown, with one tall ear of pink plush, had a similar chin-strap. But it is early yet for any change, even in hats. One alteration in coming fashions will bring joy to many—pockets are to be re-introduced. At present they are seen on the outsides of tailor-made and other firm skirts; but the ordinary use of pockets, concealed in the folds of the fuller skirts now arriving, is promised. At the same time, hand-bags are being shown in greater variety than ever, many very prettily decorated; but possibly the manufacturers are apprehensive of the demand soon ceasing. Firm furniture brocade with dull silver braid and beading outlining the pattern, velvet with bands of bead embroidery, navy moiré silk with glove kid of a lighter shade round the edges and for handles, are specimens of the dainty reticules offered to the still pocketless.

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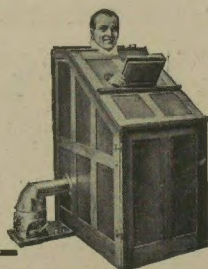
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